

## **ER-2 Flight Summary**

**Mission:** Mission 4

**Flight Scientists:** S. Platnick, P. Newman

**Sortie:** 02-949

**Date:** Thursday, 11 July 2002

**Pilot:** J. Barrilleaux

**Takeoff:** 1100 EDT (1500 UTC)

**Landing:** 1720 EDT (2120 UTC)

**Duration:** 6:20

### **Objectives:**

Overfly western site along a southwest heading coincident with Terra overpass (1615 UTC) along with WB-57, Citation, Proteus, Twin Otter, and P-3. Continue to overfly anvils/cores along western coast with direction from NPOL. Sea breeze expected over the western coast with relatively light NE winds aloft.

After Terra legs, ER-2 was directed to work along the central axis of the peninsula. Ended mission on series of southwest-northeast legs across Gulf of Mexico just north of the Florida Keys.

### **Satellite or fixed coordination:**

#### **Satellites (relative to western site):**

Aqua – 1922 UTC, VZA = 60 deg.

Terra – 1615 UTC, VZA = 6.5 deg.

#### **Western ground site:**

PARSL, Everglades National Park, Gulf Coast Visitor's Center  
25 50.7 N, 81 23.15 W

*ER-2 overpasses of western site at: 1615 UTC.*

**No ER-2 overpasses of the eastern ground site.**

### **Aircraft coordination:**

Nominal take off times (local): WB-57 (1130), Proteus (1015), Citation (2<sup>nd</sup> flight: 1400)

**WB-57:** Cloud-top in situ sampling in anvil or cirrus along ER-2 Terra overpass track, with coincident coordination over the western ground site. Fly under ER-2 legs as much as possible during redirected parts of mission.

**Proteus:** Fly along ER-2 leg during Terra overpass, with coincident coordination over the ground site. Fly along ER-2 legs as much as possible during redirected parts of mission. *Brief: reported coincidence with ER-2 for much of flight. Noted that WB-57 was offset from ER-2/Proteus by about 5 miles to the right of the flight track direction (not intentional).*

**Citation:** In situ sampling of cloud during Terra/ER-2/WB-57 leg in vicinity of ground site if possible. Attempt to sample upper parts of cloud for remote sensing validation. *Brief: reported cloud sampling for 2 1/2 hours (starting at approximately 1915 UTC).*

**Twin Otter:** Underfly all aircraft during the Terra leg for radiation measurements with coincidence over ground site. *Brief: successfully positioned under anvil while underflying ER-2 for radiometer measurements.*

#### **Aircraft issues:**

Flaps did not work during decent, aircraft came in hot.

WB-57 takeoff delayed due to failure in opening hangar doors, just made Terra overpass at western ground site.

#### **Summary/highlights:**

- Expect first good multi-aircraft (WB-57, Citation, Proteus) in situ and remote sensing coordination in anvils to date. Expect good radiometry coordination with Twin Otter in latter part of flight.

- **Dropsondes:** 4 out of 4 collected data, all dropped north of the Keys.

#1: 1620 UTC, 25 14 N, 81 33 W

#2: 1826 UTC, 25 N, 81 17 W

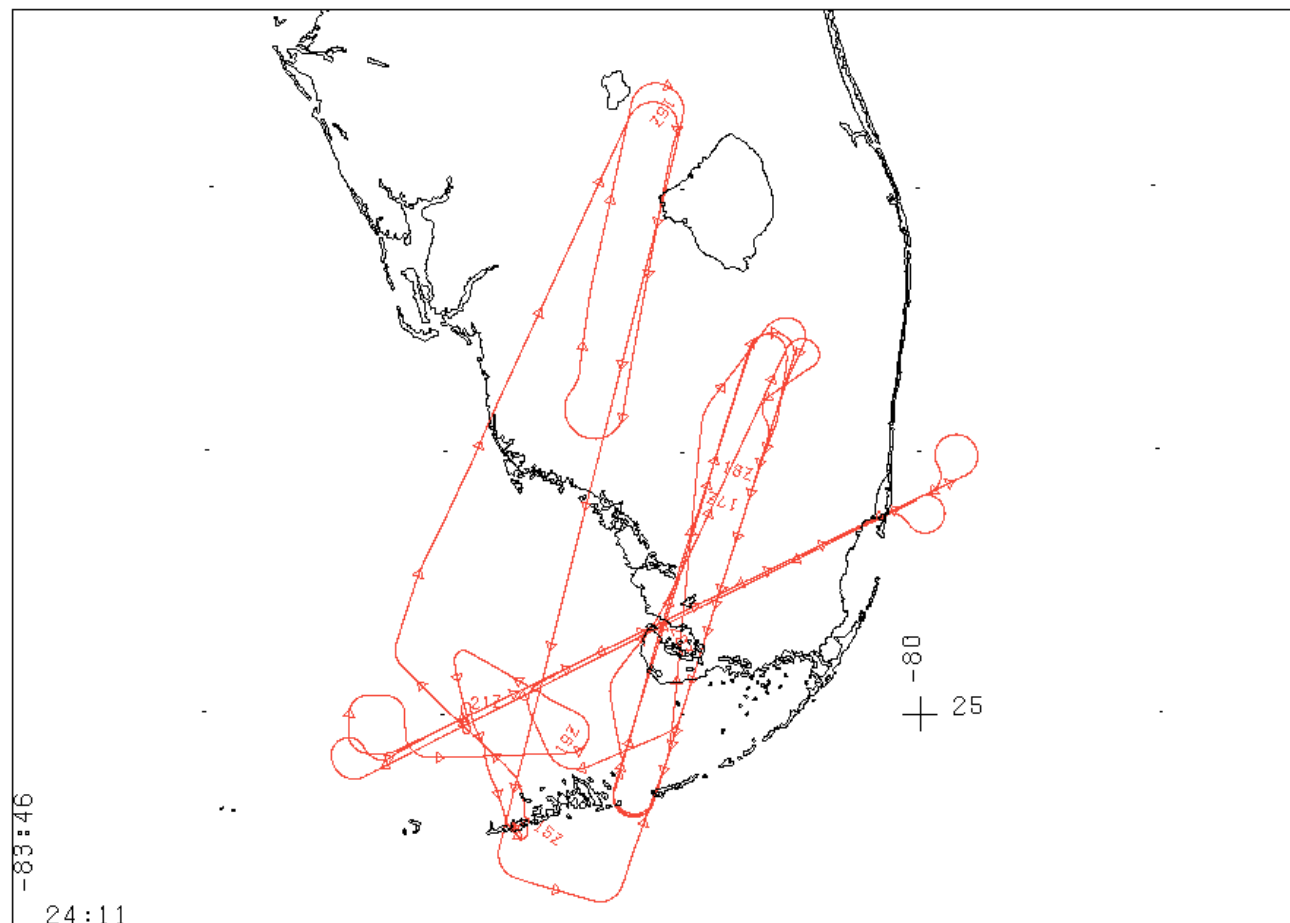
#3: 1936 UTC, 25 14 N, 81 19 W

#4: 1940 UTC, 25 N, 81 49 W

## ER-2 science instrument payload and status:

<b>Instrument</b>	<b>Status</b>	<b>Notes</b>
<b>CoSSIR</b> Conical Scanning Sub-mm wave Imaging Radiometer	<b>F</b>	<b>Failure at/near turn on</b>
<b>CPL</b> Cloud Physics Lidar	<b>F</b>	<b>Failure at/near turn on</b>
<b>CRS</b> Cloud Radar System	<b>G</b>	<b>Momentary failure, came back when power recycled</b>
<b>EDOP</b> ER-2 Doppler Radar	<b>G</b>	
<b>JLH</b> JPL Laser Hygrometer	<b>–</b>	<b>Not installed</b>
<b>MAS</b> MODIS Airborne Simulator	<b>G</b>	<b>~ 8 % of scans failed to take data (generally towards end of flight), attributed to humidity, moisture from evening/morning rains affecting data system</b>
<b>MMS</b> Meteor. Meas. System	<b>G</b>	
<b>MTP</b> Microwave Temperature Profiler	<b>G</b>	
<b>RAMS</b> Radiation Meas. System	<b>G</b>	
<b>SSFR</b> Solar Spectral Flux Radiometer	<b>G</b>	
Dropsonde	<b>G</b>	<b>all 4 sondes took data</b>

**G = good; P = partial data collected; F = failure, no data**



FLIGHT 02-949      11 JULY 2002      A/C 809      CRYSTAL/FACE  
 LAMBERT CONFORMAL PROJECTION: SP1 = 23.8 SP2 = 26.9 CM = -81.1 ROTATED BY 0.0  
 14:55:00 TO 21:20:00 UT      SCALE 1:2.25E+06      TIME TICK EVERY 5.00 MINUTES